ATLAS RESIN PROPPANTS

April 8, 2011

Operation Permit Team Leader
Bureau of Air Management AM/7
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707-7921

Subject: Operation Permit Renewal for Atlas Resin Proppants, LLC (FID #627005280)
NR 407 Operation Permit No. 627005280-P02

Dear Sir or Madam:

Enclosed are three copies of an application requesting the renewal of the above-referenced operation permit for the Atlas Resin Proppants, LLC (Atlas) facility located at N7530 County Road P in Taylor, Wisconsin. A major, Part 70, NR 407 Operation Permit was last reissued to this facility January 19, 2010, which expires on October 10, 2011. In accordance with s. 285.66(3), Wisconsin Statutes, the renewal application is required to be submitted at least 6 months prior to expiration, which corresponds to April 10, 2011.

Your time and consideration of this matter are much appreciated. Should you have any questions, please call our environmental consultant, Mr. Joe Liello (RMT, Inc.) at 262-879-1212, ext. 5608, or Dawn Tiffany at 715-662-2200, ext. 234.

Sincerely,

Atlas Resin Proppants, LLC

Robbie N. Sage
Executive Vice President

Enclosures

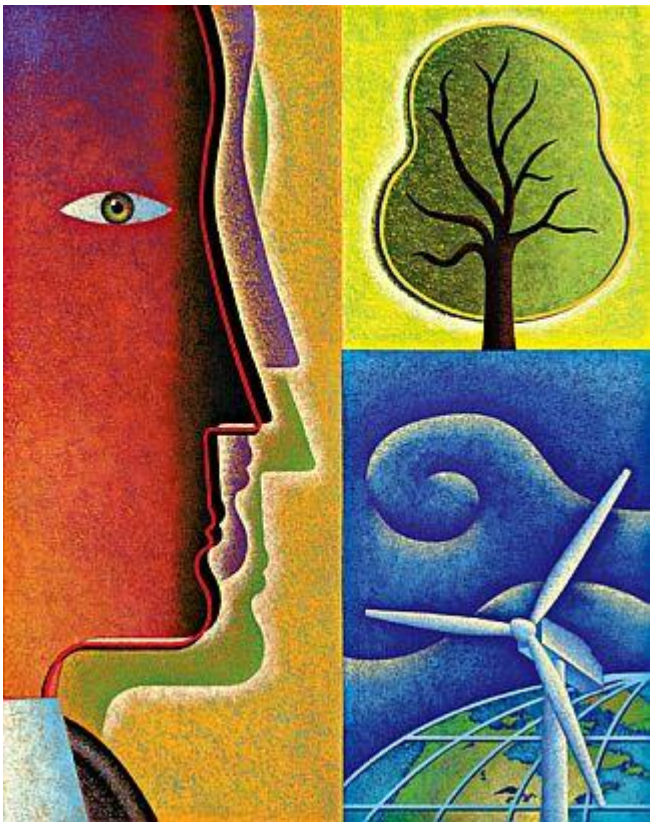
cc: Dawn Tiffany, Atlas Resin Proppants, LLC
Joe C. Liello, RMT, Inc.

Application for Operation Permit Renewal

Permit No. 627005280-P02

Atlas Resin Proppants, LLC
Taylor, Wisconsin

April 2011



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Application for Operation Permit Renewal

Permit No. 627005280-P02

Atlas Resin Proppants, LLC
Taylor, Wisconsin

April 2011

150 N. Patrick Boulevard, Suite 180 • Brookfield, WI 53045-5854 • (262) 879-1212 • (262) 879-1220 FAX • www.rmtinc.com

CREATING BALANCE℠

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List of Appendices

Acronyms

AAC	Ambient Air Concentration
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
HAP	Hazardous Air Pollutant
MTE	Maximum Theoretical Emissions
NESHAP	National Emission Standard for Hazardous Air Pollutants
NTU	Nephelometric Turbidity Units
PTE	Potential to Emit
TPY	Tons Per Year
VOC	Volatile Organic Compounds
WDNR	Wisconsin Department of Natural Resources

Section 1
Introduction

Atlas Resin Proppants, LLC (Atlas) operates a facility located in Taylor, Wisconsin. This facility was issued a major source NR 407 operating permit on October 10, 2006. The operating permit (WDNR Permit No. 627005280-P02) was last revised on January 19, 2010, to convert and incorporate sources associated with WDNR construction permit 07-JAJ-042 into the facility's operating permit. With the addition of the new sources covered by the latter construction permit, the facility became a major Part 70 source because potential emissions of a single federal hazardous air pollutant (HAP), phenol, exceeded 10 tons per year (TPY). Atlas has also requested several changes as part of this application, which are detailed in the Preliminary Determination that was issued by the WDNR on September 21, 2009, and is hereby incorporated by reference.

Given a 5-year permit term, this permit expires on October 10, 2011. In accordance with s. 285.66(3), Wisconsin Statutes, a renewal application is required to be submitted at least 6 months prior to expiration, which corresponds to April 10, 2011. This document, along with the enclosed appendices, serves as a complete application package for the renewal of the operation permit for Atlas. Completed Wisconsin Department of Natural Resources (WDNR) permit application forms are contained in Appendix A.

A discussion of new and/or pending regulations anticipated to be applicable to the facility's operations since the permit was issued is presented in Section 2. Revisions to the permit since it was last reissued are discussed in Section 3.

Section 2
New and Pending Rule Applicability

2.1 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants

The facility is a major source of hazardous air pollutants (HAP). At this time, there is no major source National Emission Standards for Hazardous Air Pollutants (NESHAP) that is known to be applicable to the facility's operations for which compliance is currently required.

The NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters was published in the Federal Register on March 21, 2011, with which compliance for existing sources subject to this requirement is required no later than March 21, 2014. This facility does have natural gas fired raw material heaters (Process ID Nos. P24 & P123), which are understood to be considered as *process heaters* under this regulation and, as such, are expected to be subject to this requirement. Applicable provisions should be incorporated into the operating permit upon renewal.

2.2 40 CFR Part 64 Compliance Assurance Monitoring

As part of the permit renewal process, Atlas is required to assess the applicability of the Compliance Assurance Monitoring (CAM) requirements, codified under 40 CFR 64. CAM Plans were previously submitted to the WDNR, which have been incorporated into Part III of the current operating permit. Proposed revisions to the CAM Plans are discussed further in Section 3.

Section 3
Summary of Changes

No significant changes are known to have occurred at the facility since the current NR 407 operating was issued on January 19, 2010. However, several changes are hereby requested, which are further discussed in the following sections.

3.1 Ammonia Emissions

In part, this facility operates two sand coating lines, designated as Tower A and Tower B. Each line generally includes sand handling operations and the blending of sand with a phenolic resin and a cross-linking agent in a batch mixer to coat the sand. The resin-coated sand is transferred to a continuous mixer that fluidizes the coated sand until it is sufficiently cooled. The cross-linking agent that is used is hexamethylenetetramine (hexa), which has a chemical formula of $(CH_2)_6N_4$.

Until 2010, the primary emissions that were originally anticipated from this process included particulate matter, volatile organic compounds (VOC), and phenol. Based on information available up to this time, the majority of the nitrogen contained in the hexa was expected to remain in the sand. In the presence of heat and water, the organic portion of the hexa molecule $(CH_2)_6$ reacts to provide a source of formaldehyde[1] that, in turn, reacts with the excess phenol contained in the resin to affect the curing and cross-linking/polymerization of the resin. In general, no free formaldehyde is expected to be emitted as it reacts with excess phenol in the resin. The presence of excess phenol in the resin serves to completely react with the formaldehyde from the hexa, while the unreacted excess phenol is expected to be emitted.

In the course of permitting a facility (WDNR Construction Permit No. 10-POY-133) located in Merrillan Wisconsin in 2010, and as discussed in a letter to Mr. Paul Yeung (WDNR) dated March 30, 2010, Atlas received new information from its then planned resin supplier regarding the anticipated fate of the nitrogen contained in the hexa. This information indicated that relatively little of the nitrogen remains in the sand. The balance of the nitrogen is conservatively expected to be converted to ammonia.

Upon further review of the hexa supplier's information, only about 0.0753 percent of the nitrogen contained in the hexa is expected to be retained in the cured proppant. This information, coupled with the maximum anticipated hexa usage rate, yields an estimated maximum theoretical emission (MTE) rate for ammonia of 69.85 pounds per hour, per sand

[1] In the presence of heat and water, 1 mole of hexa decomposes into 6 moles of formaldehyde and 4 moles of ammonia.

coating line. At this rate, the maximum theoretical annualized emissions exceed the 819 pound per year inclusion level under NR 407. Therefore, ammonia emissions need to be reflected in the NR 407 permit as significant.

The wet scrubber systems are expected to provide limited control of ammonia emissions. The ammonia removal efficiency has been estimated based on engineering calculations that are based, in part, on analytical data regarding the amount of nitrogen retained in scrubber water and sludge, and the amount of nitrogen retained in the resin coated sand. Due to variability in the amount of scrubber water and sludge generated – parameters upon which the control efficiency estimates are dependent – the estimated control efficiency tends to vary. Based on estimates for calendar years 2006 through 2009, an average annualized control efficiency of 1.724 percent has been estimated.

Actual historical ammonia emissions for the facility were calculated for each year since the facility commenced operations in 2005, which were reported to Mr. Ralph Patterson (WDNR) in 2010. Actual historical ammonia emissions have routinely been less than the 250 ton per year (TPY) major source threshold under New Source Review (NSR) permit requirements. However, Atlas hereby requests that a federally enforceable limit be incorporated into the operating permit that limits facility-wide ammonia emissions to less than 250 TPY. A nominal limit set at 95 percent of this threshold is requested, which equates to 237.5 TPY on a 12-month rolling total basis. Atlas proposes to demonstrate compliance with this limit via calculating actual emission on a monthly basis, and summing such estimates for each consecutive 12-month period.

For NR 445 compliance demonstration purposes, AERMOD modeling was conducted, which entailed modeling the three (3) scenarios below to estimate maximum daily hexa throughput rates that would result in NH3 emissions that meet the 24-hour NR 445 acceptable ambient concentration (AAC) of 418 $\mu g/m^3$. If the 24-hr AAC is met, the annual AAC will be also be met.

1. Towers A & B operating simultaneously at equal emission rates
2. Tower A operating alone
3. Tower B operating alone

Based on the modeling results, daily hexa throughput rates were estimated that coincide with the NR 445 AAC of 418 $\mu g/m^3$. The results for each scenario are as follow and the derivation thereof is provided in Attachment 1.

Scenario	Daily Rate to Hit 405 µg/m³ (ambient)					
	lb Hexa/day			lb Sand/day		
	Tower A	Tower B	Total	Tower A	Tower B	Total
1	3,655	3,655	7,310	874,169	874,169	1,748,338
2	5,375	0	5,375	1,285,542	0	1,285,542
3	0	7,029	7,029	0	1,681,094	1,681,094

In part, the results of this assessment are based on nominal sand recipe information for Premium Resin Coated (PRC) sand, which has a hexa to sand ratio of approximately 0.00418 pounds of hexa per pound of sand. Changes in the sand recipe (*e.g.*, manufacturing non-premium resin coating sand) will correspondingly result in a change in the information tabulated above. It is not practically feasible to model all potential operating scenarios to account for changes in sand recipes to accommodate production demands and the relative distribution thereof to Towers A & B. Consequently, to demonstrate compliance with NR 445, Atlas proposes to maintain sufficient records to demonstrate compliance with the NR 445 requirements. Such records include daily throughput (*e.g.*, pounds of hexa per day and/or pounds of sand per day), by Tower, coupled with dispersion modeling data (similar to that which is noted above) that corresponds to the types of sand recipes currently being manufactured and which effectively daily limits in terms of hexa and/or sand throughput by Tower.

In the longer term, Atlas is considering modifications to the current wet scrubber control systems to increase ammonia control efficiency to levels that will facilitate the demonstration of compliance with NR 445 requirements – ideally to levels that are below the NR 445 table value of 28.2 pounds per hour for stacks greater than 75 feet. Based on the maximum theoretical inlet loading, this would correspond to a minimum control efficiency of 80 percent.

3.2 Formaldehyde Emissions

Based on the results of a recent stack test performed at Atlas' Merrillan facility, trace amounts of formaldehyde were detected, including an average of 0.089 and 0.017 pounds per hour for Towers C & D, respectively. The corresponding amount of sand processed during the testing was approximately 30,981 pounds per hour for Tower C and 33,113 pounds per hour for Tower D. This information yields emission factors of 2.87E-06 lbs-formaldehyde/lbs-sand and 5.13E-07 lbs-formaldehyde/lbs-sand for Towers C & D, respectively. The average emission factor is approximately 1.69E-06 lbs-formaldehyde/lbs-sand.

Assuming that the stack test results for Merrillan are reasonably representative of that which may be expected from Taylor's operations, emissions for Taylor have conservatively been estimated assuming an emission factor of 1.69E-06 lbs-formaldehyde/ton-sand for each of Towers A & B, which each have a capacity of 38,000 lbs-sand per hour. The estimated

maximum theoretical hourly emission rate is 0.064 pounds of formaldehyde per hour, per tower. This translates to an annualized maximum theoretical emission rate of approximately 1,127 pounds per year (combined).

The estimated maximum theoretical formaldehyde emissions are expected to exceed the 13.7 pound per year significance threshold under s. NR 407.05, Wis. Adm. Code and, therefore, are required to be included in the permit. However, the estimated emissions are below the 4,712 pound per year threshold (stacks greater than 75') for hazardous pollutant emissions under s. NR 445.07, Wis. Adm. Code.

3.3 Parametric Monitoring

In accordance with a February 25, 2011, letter from Mr. Jeffery Johnson (WDNR), which is hereby incorporated by reference, it is requested that the measurement of Nephelometric Turbidity Units (NTU) to demonstrate compliance with particulate matter emission limits under Conditions I.E.1.b.(6) and I.J.1.b.(6), and the associated recordkeeping requirements under Conditions I.E.1.c.(3)(d) and I.J.1.c.(3)(d) be removed from the operating permit. Effective as of February 25, 2011, the WDNR released Atlas from utilizing this specific monitoring compliance demonstration method and associated recordkeeping requirement. Consistent with this release, it is requested that these monitoring and recordkeeping requirements be removed from the CAM plans for each of the two scrubbers in Part III of the operating permit.

As discussed previously with Mr. Tom Ponty (WDNR), monitoring of the scrubber liquor flow rates under Conditions I.E.1.c.(5), I.E.3.c.(3), I.J.1.c.(5) and I.J.3.c.(2) has been challenging due to frequent fouling of flow rate meters. As an alternate to the use of flow rate meters, Atlas hereby requests to allow the following as an alternate means to demonstrate compliance with scrubber flow rate measurement requirements: at least once every 8-hours of operation, confirm scrubber liquor pump flow by conducting a documented visual inspection to confirm return flow to the sludge tank, coupled with monitoring and recording of the motor power of the scrubber liquor recirculation pump.

Finally, it is requested that the quantitative pressure drop ranges, pH ranges, and flow rate ranges for each of the wet scrubbers (*i.e.*, C50 and C150) specified in the most current Malfunction Prevention and Abatement Plan (MPAP) or CAM plans be directly incorporated into the corresponding permit conditions, which currently stipulate only that such parameters be maintained in accordance with manufacturer specifications. In particular, the permitted pressure drop ranges for: 1) baghouses C20 and C120 should be consistently specified as 1 to 8 inches of water column in both the permit and the CAM Plan; and 2) wet scrubbers C50 and C150 should be consistently specified as 8 to 17 inches of water column in both the permit and the CAM Plan.

3.4 Miscellaneous

It is requested that the citation of s. NR 439.055(1)(a), which relates to pressure drop monitoring of baghouses, under Conditions I.E.1.b.(2) and I.J.1.b.(2), be changed to s. NR 439.055(1)(e) to more appropriately relate to pressure drop and liquor flow rate monitoring for wet scrubbers used to control particulate matter emissions.

Appendix A
WDNR Permit Application Forms

State of Wisconsin
Department of Natural Resources

INDEX OF AIR POLLUTION PERMIT APPLICATION FORMS
Form 4530-134 Rev. 12-99

I.ADMINISTRATION	
This application contains the following forms:	☒ Form 4530-100, Facility Identification
	☒ Form 4530-101, Facility Plot Plan
	☒ Forms 4530-102, -102A, and -102B, Source and Site Descriptions

II. EMISSIONS SOURCE DESCRIPTION		Total Number of This Form
This application contains the following forms (one form for each facility boiler, printing operation, etc.):	☐ Form 4530-103, Stack Identification	
	☐ Form 4530-104, Boiler or Furnace Operation	
	☐ Form 4530-105, Storage Tanks	
	☐ Form 4530-106, Incineration	
	☐ Form 4530-107, Printing Operations	
	☐ Form 4530-108, Painting and Coating Operations	
	☐ Form 4530-109, Miscellaneous Processes	

III.AIR POLLUTION CONTROL SYSTEM		Total Number of This Form
This application contains the following forms:	☐ Form 4530-110, Miscellaneous	
	☐ Form 4530-111, Condensers	
	☐ Form 4530-112, Adsorbers	
	☐ Form 4530-113, Catalytic or Thermal Oxidation	
	☐ Form 4530-114, Cyclones/Settling Chambers	
	☐ Form 4530-115, Electrostatic Precipitators	
	☒ Form 4530-116, Wet Collection Systems	**2**
	☐ Form 4530-117, Baghouses/Fabric Filters	

IV.COMPLIANCE DEMONSTRATION		Total Number of This Form
This application contains the following forms (one for each facility boiler, printing operation, etc.):	☒ Form 4530-118, Compliance Certification - Monitoring and Reporting	**2**
	☐ Form 4530-119, Continuous Emission Monitoring	
	☐ Form 4530-120, Periodic Emission Monitoring Using Portable Monitors	
	☒ Form 4530-121, Control System Parameters or Operation Parameters of a Process	**2**
	☐ Form 4530-122, Monitoring Maintenance Procedures	
	☐ Form 4530-123, Stack Testing	
	☐ Form 4530-124, Fuel Sampling and Analysis	
	☒ Form 4530-125, Recordkeeping	**2**

V.EMISSION SUMMARY AND COMPLIANCE CERTIFICATION		Total Number of This Form
This application contains the following forms quantifying emissions, certifying compliance with applicable requirements, and developing a compliance plan	☒ Form 4530-126, Emission Unit Hazardous Air Pollutant Summary	2
	☒ Form 4530-127, Facility Hazardous Air Pollutant Summary	1
	☐ Form 4530-128, Emission Unit Summary	
	☐ Form 4530-129, Facility Emissions Summary	
	☒ Form 4530-130, Current Emissions Requirements and Status of Unit	2
	☐ Form 4530-131, Emission Unit Compliance Plan - Commitments and Schedule	
	☒ Form 4530-132, Current Emissions Requirements and Status of Facility	1
	☐ Form 4530-133, Facility Requirement Compliance Plan Commitments and Schedule	

VI.SIGNATURE OF RESPONSIBLE OFFICIAL

A.STATEMENT OF COMPLETENESS

I have reviewed this application in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this application are true, accurate and complete.

B.FOR RENEWALS ONLY

I have reviewed this application, the original operation permit application dated 01/10/2005, and operation permit number 627005280-P02 in their entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this renewal application are true, accurate and complete.

C.CERTIFICATION OF FACILITY COMPLIANCE STATUS (check one box only)
THIS IS NOT A REQUIREMENT OF NON-PART 70 SOURCES.

☐ I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements.

☐ I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements, except for the following emissions unit(s):

_____ .
(list all non-complying units)

Printed or Typed Name	Title
Robbie N. Sage	**Executive Vice President**
Signature 	Date Signed 4/8/11

SEND ALL MATERIALS TO:
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
BUREAU OF AIR MANAGEMENT
OPERATION PERMIT TEAM LEADER
P.O. BOX 7921
MADISON, WI 53707-7921

APPENDIX M
CHECK LIST FOR RENEWAL APPLICATIONS

Checklist for completion of Renewal Application Forms

YES	NO	Condition
X		Changes or additions at the facility during the 5-year term since operating permit issuance.
	X	Electronic-permit software- forms completed.
	X	Electronic Word Perfect (or MS Word saved as a Word Perfect file) forms completed.
X		For changes and additions to the facility, applicable forms were completed.
	X	Updated plot plan, if needed.
	X	Listed any construction (NSR) permits or permit exemptions issued during 5-year term.
	X	Listed any modifications or additions not requiring an NSR permit but requiring inclusion into the operating permit because maximum theoretical emissions exceed levels listed in s. NR 407.05, Wis. Adm. Code.
X		Updated information and emission factors used to recalculate potential emissions, **if applicable.**
	X	Listed any new insignificant activity added during the 5-year permit term.
X		**For Part-70 sources** - Documented any new applicable regulatory requirements (i.e. MACT, CAM, and any others).
X		Signed Certification - This is required whether or not there were any changes at the facility.

If you have a Part 70 Operation Permit and operate any add-on control devices, you will now be required to meet the Compliance Assurance Monitoring (CAM) rule in 40 CFR Part 64. The rule requires that a CAM plan be submitted with your Title V renewal application for each pollutant at each emissions unit with a control device and has a potential to emit - prior to controls - of that pollutant greater than the major source threshold for the respective pollutant. Please refer to the CAM Technical Guidance web site at: **http://www.epa.gov/ttn/emc/cam.html** for further documentation on the rule and how to prepare a CAM plan for submittal with your renewal application.

CAM Plans are already contained in Part III of the current operating permit

APPENDIX N

SUMMARY OF CHANGES TO ORIGINAL OPERATION PERMIT APPLICATION

Form No:	Item No:	Stack No:	Process No:	Description of change (also indicate whether this is a new form):
4530-100	1	N/A	N/A	Company name changed from Atlas Resin Proppants LP to Atlas Resin Proppants, LLC.
4530-100	1	N/A	N/A	The permit contact person has been changed to Ms. Dawn Tiffany, along with corresponding contact information.
4530-127	3	N/A	N/A	Added facility-wide emission estimates for ammonia and formaldehyde, which are expected based on information (*e.g.*, supplier information, stack testing at similar facility) that became available since the permit was last issued.
4530-126	6	S50	P51, P52	Added process emission estimates for ammonia and formaldehyde, which are expected based on information (*e.g.*, supplier information, stack testing at similar facility) that became available since the permit was last issued.
4530-126	6	S150	P151, P152	Added process emission estimates for ammonia and formaldehyde, which are expected based on information (*e.g.*, supplier information, stack testing at similar facility) that became available since the permit was last issued.
4530-118	All	S50	P51, P52, T31, T32	Revised to include ammonia tracking for compliance demonstration purposes.
4530-118	All	S150	P151, P152, T131, T132	Revised to include ammonia tracking for compliance demonstration purposes.
4530-121	All	S50	P51, P52, T31, T32	Revised current parametric monitoring to (1) eliminate NTU monitoring & recordkeeping for the scrubber; (2) allow for an alternate means for demonstrating compliance with wet scrubber liquor flow rate requirements; and (3) add requirements related to parametric monitoring for demonstrating compliance with ammonia requirements.
4530-121	All	S150	P151, P152, T131, T132	Revised current parametric monitoring to (1) eliminate NTU monitoring & recordkeeping for the scrubber; (2) allow for an alternate means for demonstrating compliance with wet scrubber liquor flow rate requirements; and (3) add requirements related to parametric monitoring for demonstrating compliance with ammonia requirements.
4530-125	All	S50	P51, P52, T31, T32	Proposed recordkeeping requirements to demonstrate compliance with NR 445 requirements for ammonia and formaldehyde, as well as to demonstrate compliance with a proposed facility-wide limit on ammonia emissions.
4530-125	All	S150	P151, P152, T131, T132	Proposed recordkeeping requirements to demonstrate compliance with NR 445 requirements for ammonia and formaldehyde, as well as to demonstrate compliance with a proposed facility-wide limit on ammonia emissions.

4530-130	5 - 9	S50	P51, P52, T31, T32	Included requirements for ammonia and formaldehyde
4530-130	5 - 9	S150	P151, P152, T131, T132	Included requirements for ammonia and formaldehyde
4530-132	3 - 7	N/A	N/A	Requested a federally enforceable facility-wide limit on ammonia emissions of 237.5 tons per year on a 12-month rolling total basis.

State of Wisconsin
Department of Natural Resources

FACILITY IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-100 Rev. 12-99 Information attached? N (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1.	Facility name and mailing address	Name	**Atlas Resin Proppants, LLC**
		Street or Route	**N7530 County Road P**
		City, State, Zip Code	**Taylor, WI 54659**
2.	Facility location	Street Address	**N7530 County Road P**
		City, County	**Taylor, Jackson County**
3.	Parent corporation	Name	**N/A**
		Street or Route	
		City, State, Zip Code	
		Country (if not U.S.)	
4.	Responsible official	Name	**Robbie Sage**
		Title	**Executive Vice President**
		Telephone	**(715) 662-2200, Ext. 103**
5.	Permit contact Person	Name	**Dawn A. Tiffany, MS, ASP**
		Title	**Safety, Health & Environmental Specialist**
		Telephone	**(715) 662-2200 ext. 234**

6. SIC code: **2899**

7. Facility identification number: **627005280**

8. Primary activity of the operating establishment: **Resin-coated sand production**

9. Type of permit

☐ Construction permit

☐ Operation Permit OR ☒ Operation Permit Renewal

Anticipated start date for construction:_____

Anticipated start date for operation: _____

This application is requesting an expedited review (see instructions) ☐ Yes ☐ No

☐ Part 70 Source Application

☐ Non - Part 70 Source Application

☐ Synthetic Minor, Non - Part 70 Source Application

☐ Elective operation permit

10. If facility is located in an area designated as "nonattainment," indicate the pollutant for the nonattainment designation.
N/A

11. List all air pollution permits and orders issued to this facility (if a renewal application, just list those issued since the issuance date of your existing operation permit). **None**

12. If Renewal Application: List all air pollution control permit applications you have submitted on which the Department has not yet taken action. (If no permit number has been assigned yet, indicate the date of the application).
None

13. If Renewal Application: List all permit exemptions received from the Department since the issuance date of your existing operation permit. (Reference these by the date of the exemption letter or the exemption number if one was assigned.)
Letter from Mr. Jeffrey Johsnon (WDNR) dated February 25, 2011, releasing Atlas from particulate matter demonstration via NTU readings on wet scrubber operations.

State of Wisconsin
Department of Natural Resources

FACILITY PLOT PLAN
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-101 Rev. 12-99

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

In order for a comprehensive air quality analysis to be accomplished, a facility plot plan MUST be included with the permit application. If the application is for an initial operation permit, submit the elements under #2 below. If the application is for a renewal, answer #1 below first.

1. Have there been changes to the facility plot plan since the previous operation permit application was submitted?

   ☒ No. The plot plan submitted with the original application can be used for the renewal.

   ☐ Yes. An up-to-date plot plan is attached.

2. If there have been changes to the facility plot plan since the last operation permit application submittal, RESUBMIT an up-to-date plot plan which must include the following or the permit application will be deemed incomplete:

FOR DEPARTMENT USE ONLY

COMPLETE	INCOMPLETE	NOT APPLICABLE	
☐	☐		1. A building layout (blueprint, plan view) including all buildings occupied by or located on the site of the facility.
☐	☐		2. The maximum height of each building (excluding stack height).
☐	☐		3. The location and numerical designation of each stack. Please ensure these designations correspond to the appropriate stacks listed on the other permit forms in this application.
☐	☐	☐	4. The location of fenced property lines (if any).
☐	☐		5. Identify direction "North" on all submittals.
☐	☐		6. All drawings shall be to scale and shall have the scale graphically depicted.
☐	☐		7. An additional regional map depicting the facility location in relation to the surrounding vicinity (roads or other features) shall be included.

Are there any outdoor storage piles on the facility site? ☐ Yes ☒ No

If so, what material does the pile(s) consist of?

Are there any dirt roads or unpaved parking lots on the facility site? ☐ Yes ☒ No

State of Wisconsin
Department of Natural Resources

SOURCE AND SITE DESCRIPTIONS
AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-102 Rev. 12-99 Information attached? N (y/n)

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. Briefly describe the proposed project or existing Unit(s) to be permitted. Attached supplemental forms as needed.

This is a renewal application.

For Renewal Applications:

1. Were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date?

☒ No. Proceed to form 4530-102A.

☐ Yes. Answer the following questions:

2. Briefly describe any new/modified emissions units installed at the facility since the last operation permit issuance date and include the following information. Attach supplemental forms as needed. **None**

a. List the Department issued construction and/or operation permit number as applicable (identifying which units were covered by which permit if multiple permits issued).

i. If operation permit application forms were submitted for the new emission unit(s) covered by the construction permit mentioned above, reference the date of that application.

ii. For Part 70 Sources Only: If no operation permit application forms were submitted for the new emissions unit(s) covered by the construction permit mentioned above, complete the appropriate forms 4530-118 through 4530-125.

b. Include the Department issued construction permit exemption number, if one was assigned, or reference the date of the letter of the exemption.

2. Site Description

The facility is located in a predominantly agricultural area in Jackson County.

State of Wisconsin
Department of Natural Resources

SOURCE DESCRIPTION - SUPPLEMENTAL
AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-102A Rev. 12-99 Information attached? Y (y/n)

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. List all significant existing or proposed air pollution units, operations, and activities at the facility. A short narrative of the inventory of air pollution emissions unit (e.g., boiler, printing line, etc.) followed by equipment specifications will suffice. If the facility consists of several individual emission units, present this information in an outline format. (See instruction booklet for an example Unit description.)

   This is a renewal application – no new or modified emission units were installed or modified since the current operating permit was issued. Please see the accompanying text for details regarding requested changes to the current operating permit.

For Renewal Applications:

1. If there were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date: **None**

   a. If any of these new/modified units were exempt from construction permit requirements, but are significant emissions units and operation permit application(s) for the new unit(s) were submitted to the Department reference the date of those submittals.

   b. If any of the new/modified units are insignificant emissions units list them on form 4530-102B.

   c. If any of the new/modified emissions units do not fit any of the above categories, fill out the appropriate forms for each emissions unit as follows:

      i. For Part 70 Sources: Fill out the appropriate forms 4530-103 through 4530-133; OR

      ii. For Synthetic Minor Non Part-70 Sources and Non-Part 70 Sources: Fill out the appropriate forms 4530-103 through 4530-117 and 4530-126 through 4530-129.

State of Wisconsin
Department of Natural Resources

SOURCE DESCRIPTION - SUPPLEMENTAL
AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-102B Rev. 12-99 Information attached? _N_ (y/n)

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. Mark all insignificant existing or proposed air pollution units, operations, and activities at the facility listed below. If not listed, provide a short narrative of the inventory of air pollution emissions unit (e.g., boiler, printing line, etc.) followed by equipment specifications. If the facility consists of several individual emission units, present this information in an outline format. **For Renewal Applications, identify those that are new since the last update to your application.** (See instruction booklet for an example Unit description.)

   No new insignificant sources since the last update to the NR 407 operating permit application.

State of Wisconsin
Department of Natural Resources

FACILITY HAZARDOUS AIR POLLUTANT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-127 11-93 Information attached? Y (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC** | 2. Facility identification number: **627005280**

3. Complete the following emissions summary for all hazardous air emissions at this facility (as defined in ch. NR 445, Wis Adm. Code, and sec. 112, 1990 Clean Air Act Amendments):
Only previously unreported (unknown) emissions are listed below

Pollutant CAS	Actual emissions		Maximum theoretical emissions		Potential to emit	
		Units		Units		
Ammonia **CAS No. 7664-41-7**	**61.69** **461,370**	**Lbs/hr** **Lbs/yr**	**139.76** **1,224,280**	**Lbs/hr** **Lbs/yr**	**237.5**	TPY
Formaldehyde **CAS No. 50-00-0**	**601**	**Lbs/yr**	**1,139**	**Lbs/yr**	**0.57**	TPY
						TPY
						TPY
						TPY
						TPY
						TPY
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						TPY

State of Wisconsin
Department of Natural Resources

CURRENT EMISSIONS REQUIREMENTS AND STATUS OF FACILITY
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-132 11-93

Information attached? (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**

3. Pollutant	4. Wis. Adm. Code Wis. Stats., 40 CFR	5. State Only	6. Threshold Value	7. Compliance Status (in or out)
Ammonia CAS No. 7664-41-7	**s. 285.65(7) Wis. Stats.**		**Requested federally enforceable limit to restrict facility-wide ammonia emissions to 237.5 tons per year on a 12-month rolling total basis**	**IN**

8. Is this facility subject to the provisions governing prevention of accidental releases of hazardous air contaminants contained in section 112(r)(7) of the Clean Air Act? ☐ Yes ☒ No

If you answered yes, please describe how you will achieve compliance with these provisions, including the requirement to formulate a plan for preventing accidental releases (sec. 112(r)(7)(B)(ii)):

9. Other requirements (e.g., malfunction reporting, special operating conditions from an existing permit, etc.)	State Only	Compliance Status (in or out)

State of Wisconsin
Department of Natural Resources

CONTROL EQUIPMENT-WET COLLECTION SYSTEMS
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-116 11-93 Information attached? (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

Section A

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51-53, T31, T32**
5. Control device number: **C50**	

6. Manufacturer and model number: **n/a**

7. Date of installation: **December 2005**

8. Describe in detail the control system. Attach a blueprint or diagram of the system. Attached? **N**
Wet scrubber system.

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.
☐ Documentation is attached

Pollutant	Inlet pollutant concentration		Outlet pollutant concentration		Efficiency (%)
	gr/acf	Ppmv	gr/acf	Ppmv	
Particulate Matter/PM-10					**71**
Volatile Organic Compounds (soluble)					**64**
Phenol					**54.5**
Ammonia					**1.724**

10. Discuss how the collected material will be handled for reuse or disposal.
Water is reused as scrubber water or quench water, before ultimately being transferred offsite for disposal. Sludge is properly characterized and disposed off-site.

11. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:
a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
b. Operation variables that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
c. An inspection schedule and items or conditions that will be inspected.
d. A listing of materials and spare parts that will be maintained in inventory.
e. Is this plan available for review?

Section B

The following questions must be answered by sources installing new equipment or existing Units which cannot document control efficiency of this device by other means.

12. Liquid flow rate (gal/min): **45**	13. Pressure drop across the scrubber and demister (inches of H_2O): **8 – 17**
14. Inlet gas flow rate (ACFM): **6,000**	15. Inlet gas temperature (°F): **140°F**
16. Scrubbing medium (water, sodium hydroxide slurry, etc.): **Water**	17. Liquid inlet pressure (psi): **12 - 18**

State of Wisconsin
Department of Natural Resources

COMPLIANCE CERTIFICATION - MONITORING AND REPORTING
DESCRIPTION OF METHODS USED FOR DETERMINING COMPLIANCE

Form 4530-118 11-93 Information attached? __ (y/n)

All applicants except non-Part 70 sources are required to certify compliance with all applicable air pollution permit requirements by including a statement within the permit application of the methods used for determining compliance (please see sec. NR 407.05(4)(i), Wis. Adm. Code.) This statement must include a description of the monitoring, recordkeeping, and reporting requirements and test methods. In addition, the application must include a schedule for compliance certification submittals during the permit term. These submittals must be no less frequent than annually, and may need to be more frequent if specified by the underlying applicable requirement or by the Department.

SEE INSTRUCTIONS ON REVERSE SIDE

1.	Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3.	Stack identification number: **S50**	4. Unit identification number: **P51, P52, T31, T32**

5. This Unit will use the following method(s) for determining compliance with the requirements of the permit (check all that apply and attach the appropriate form(s) to this form).

☐ Continuous Emission Monitoring (CEM) - Form 4530-119
Pollutant(s):

☐ Periodic Emission Monitoring Using Portable Monitors - Form 4530-120
Pollutant(s):

☒ Monitoring Control System Parameters or Operating Parameters of a Process - Form 4530-121
Pollutant(s): **Particulate matter, VOC, phenol, ammonia**

☐ Monitoring Maintenance Procedures - Form 4530-122
Pollutant(s):

☐ Stack Testing - Form 4530-123
Pollutant(s):

☐ Fuel Sampling and Analysis (FSA) - Form 4530-124
Pollutant(s):

☒ Recordkeeping - Form 4530-125
Pollutant(s): **Ammonia, formaldehyde**

☐ Other (please describe) - Form 4530-135
Pollutant(s):

6. Compliance certification reports will be submitted to the Department according to the following schedule:

Start date: **February 14th after permit renewal**
and every **12** months thereafter.

Compliance monitoring reports will be submitted to the Department according to the following schedule:

Start date: **August 14th or February 14th after permit renewal, whichever comes first**
and every **6** months thereafter.

State of Wisconsin
Department of Natural Resources

COMPLIANCE DEMONSTRATION BY MONITORING CONTROL SYSTEM PARAMETERS OR OPERATING PARAMETERS OF A PROCESS AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-121 11-93 Information attached? __ (y/n)

The monitoring of a control system parameter or a process may be acceptable as a compliance demonstration method provided that a correlation between the parameter value and the emission rate of a particular pollutant is established in the form of a curve of emission rate versus parameter values. Ideally three sets of stack test data, that bracket the emission limit if possible, could be used to define the emission curve. This correlation shall constitute the certification of the system. It should be attached for Department approval. If it is not attached, please submit it within 60 days of the startup of the system.

SEE INSTRUCTIONS ON REVERSE SIDE

1.	Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3.	Stack identification number:**S50**	4. Unit identification number: **P51, P52, T31, T32**
5.	Pollutant(s) being monitored: **Particulate matter, VOC, phenol, ammonia**	
6.	Name of manufacturer: **N/A**	7. Model number: **N/A**
8.	Is this an existing system? ☒ Yes ☒ No	9. Installation date:

10. Method of monitoring description:

<u>Particulate Matter, VOC, Phenol* [Existing]</u>: Eliminate the current monitoring and recordkeeping of Nephelometric Turbidity Units (NTU) to demonstrate compliance with particulate matter emission limits in accordance with a February 25, 2011 letter from Mr. Jeffrey Johson (WDNR). Limit the compliance demonstration to the existing monitoring and recordkeeping of the pressure drop across the wet scrubber and demister, the pH of the wet scrubber absorbing fluid, and the wet scrubber liquor flow. Regarding the latter, due to frequent fouling of the flow meter, it is requested that an alternate means to demonstrate compliance with scrubber flow rate measurement requirements be established as follows: at least once every 8-hours of operation, conduct a documented visual inspection to confirm scrubber liquor pump flow, coupled with monitoring and recording of the motor power of the scrubber liquor recirculation pump.

Only the monitoring of the flow rate or the requested alternative compliance method is specified for phenol.

<u>Ammonia [New]</u>: As a newly expected pollutant for which the scrubber is expected to provide limited removal, the same parametric monitoring as stipulated above for phenol compliance demonstration purposes is requested.

11. Backup system: **N/A**

12. Indicate by checking: **A CAM plan is currently in Part III of the operating permit.**

The monitoring system shall be subject to appropriate performance specifications, calibration requirements and quality assurance procedures. ☐ A quality assurance/quality control plan for the monitoring system is attached for Department approval. ☐ If the plan is not attached, please submit it within 60 days of the start-up of the monitoring program. ☒ The plan was submitted to the Department.

13. The applicant shall propose an appropriate averaging period, (i.e., a particular number of continuous hours) for the purpose of defining excess emissions. The Department may approve the proposed averaging period, or other period which the Department determines to be appropriate. Provide the proposed averaging period(s) below.

Parameter	Averaging Period
Pressure Drop	**Every 8-hours of operation or once per day, whichevery yields the greater number of measurements**
Flow Rate or Visual Confirmation of Pump Flow & Check of Motor Power of Scrubber Recirculation Pump	**Every 8-hours of operation or once per day, whichevery yields the greater number of measurements**
pH	**Every 8-hours of operation or once per day, whichevery yields the greater number of measurements**

State of Wisconsin
Department of Natural Resources

COMPLIANCE DEMONSTRATION BY RECORDKEEPING
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-125 11-93 Information attached? (y/n)

Recordkeeping may be acceptable as a compliance demonstration method provided that a correlation between the parameter value recorded and the emission rate of a particular pollutant is established in the form of a curve or chart of emission rate versus parameter values. This correlation may constitute the certification of the system. It should be attached for Department approval. If it is not attached, please submit it within 60 days of the startup of the system.

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52, T31, T32**
5. Pollutant(s) being monitored: **ammonia, formaldehyde**	6. Material or parameter being monitored and recorded: **hexa and/or sand throughput**

7. Method of monitoring and recording:

Ammonia: Monitor and record daily throughput (*e.g.*, pounds of hexa per day and/or pounds of sand per day), by Tower, coupled with dispersion modeling data (similar to that which is noted above) that corresponds to the types of sand recipes currently being manufactured and which effectively daily limits in terms of hexa and/or sand throughput by Tower. Ammonia emissions will be calculated monthly and summed for each consecutive 12-month period to demonstrate compliance with the requested facility-wide ammonia limit of 237.5 TPY.

Formaldehyde: Maintain records of maximum theoretical formaldehyde emissions that indicate that such emissions comply with NR 445 table values.

8. List any EPA methods used:

N/A

9. Is this an existing method of demonstrating compliance? ☒ Yes ☐ No	10. Installation date: **2010**

11. Backup system: **None**

12. Compliance shall be demonstrated: ☒ Daily ☐ Weekly ☐ Monthly ☐ Batch (not to exceed monthly)

13. Indicate by checking: **Recordkeeping only**

The monitoring system shall be subject to appropriate performance specifications, calibration requirements, and quality assurance procedures. ☐ A quality assurance/quality control plan for the recordkeeping system is attached for Department approval. ☐ If the plan is not attached, please submit it within 60 days of the startup of the recordkeeping program. ☐ The plan was submitted to the Department on _____.

***** The compliance records shall be available for Department inspection. The format for the compliance certification report and the excess emission report shall be approved by the Department. A proposed format for the compliance certification report and excess emission report shall be submitted at the same time as the application. *****

***** The source shall record any malfunction that causes or may cause an emission limit to be exceeded. Malfunctions shall be reported to the Department the next business day. Hazardous air spills shall be reported to the Department immediately. *****

State of Wisconsin
Department of Natural Resources

EMISSION UNIT HAZARDOUS AIR POLLUTANT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-126 11-93 Information attached? N (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52**

5. Unit material description: **Sand or ceramic pellets**

6. Complete the following summary of hazardous air emissions from this unit. Attach sample calculations and emission factor references. Attached? **Yes – Only previously unreported (unknown) emissions are listed below**

Pollutant CAS	Actual emissions	Units	Maximum theoretical emissions	Units	Potential to emit	
Ammonia **CAS No. 7664-41-7**	**30.92** **228,582**	**Lb/hr** **Lb/yr**	**69.85** **611,886**	**Lb/hr** **Lb/yr**	**237.5***	TPY
Formaldehyde **CAS No. 50-00-0**	**298**	**Lb/yr**	**564**	**Lb/yr**	**564**	TPY
						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
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						TPY
						TPY
						TPY

** This is a facility-wide limit, which may be entirely consumed by this process assuming no emissions from other operations.*

State of Wisconsin
Department of Natural Resources

CURRENT EMISSIONS REQUIREMENTS AND STATUS OF UNIT AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-130 Rev. 12-99 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P51, P52, T31, T32**

5. Pollutant	6. Wis. Adm. Code Wis. Stats., 40 CFR	7. State Only	8. Limitation	9. Compliance Status (in or out)
Formaldehyde	**s. NR 445.07 Wis. Adm. Code**	**X**	**s. NR 445.08(2) Wis. Adm. Code**	**IN**
Ammonia	**s. NR 445.07 Wis. Adm. Code**	**X**	**s. NR 445.08(2) Wis. Adm. Code**	**IN**

10. Other requirements (e.g., malfunction reporting, special operating conditions from an existing permit, etc.)	State Only	Compliance Status (in or out)

** **PART 70 SOURCES ONLY:**

1. **Be sure to review the Compliance Assurance Monitoring (CAM) Rule, 40 CFR Part 64, for the Renewal Application.** The CAM rule requires owners and operators of Part 70 sources to monitor the operation and maintenance of their control equipment so that they can evaluate the performance of their control devices and report whether or not their facilities meet established emission standards. All facilities that have a Title V, Part 70, Federal Operating Permit are required to meet the CAM rule and **submit a CAM plan with this Title V renewal application.** The rule requires that a CAM plan be submitted with the Title V renewal application for each pollutant at **each emissions unit** which has a potential to emit - prior to controls - of that pollutant greater than the major source threshold for the respective pollutant. Please refer to the CAM Technical Guidance web site at http://www.epa.gov/ttn/emc/cam.html for further documentation on the rule and how to prepare a CAM plan for submittal with the renewal application.

2. List all applicable **Maximum Achievable Control Technology** (MACT) rule(s) and the effective date(s) if they were promulgated during the last 3 years of your operation permit term. Identify the emissions units subject to each MACT rule listed.

State of Wisconsin
Department of Natural Resources

CONTROL EQUIPMENT-WET COLLECTION SYSTEMS
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-116 11-93 Information attached? (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

Section A

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151-153, T131, T132**
5. Control device number: **C150**	

6. Manufacturer and model number: **n/a**

7. Date of installation: **2008**

8. Describe in detail the control system. Attach a blueprint or diagram of the system. Attached? **N**
Wet scrubber system.

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.
☐ Documentation is attached

Pollutant	Inlet pollutant concentration		Outlet pollutant concentration		Efficiency (%)
	gr/acf	Ppmv	gr/acf	Ppmv	
Particulate Matter/PM-10					**71**
Volatile Organic Compounds (soluble)					**64**
Phenol					**54.5**
Ammonia					**1.724**

10. Discuss how the collected material will be handled for reuse or disposal.
Water is reused as scrubber water or quench water, before ultimately being transferred offsite for disposal. Sludge is properly characterized and disposed off-site.

11. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:
   a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
   b. Operation variables that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
   c. An inspection schedule and items or conditions that will be inspected.
   d. A listing of materials and spare parts that will be maintained in inventory.
   e. Is this plan available for review?

Section B

The following questions must be answered by sources installing new equipment or existing Units which cannot document control efficiency of this device by other means.

12. Liquid flow rate (gal/min): **45**	13. Pressure drop across the scrubber and demister (inches of H_2O): **8 – 17**
14. Inlet gas flow rate (ACFM): **6,000**	15. Inlet gas temperature (°F): **140°F**
16. Scrubbing medium (water, sodium hydroxide slurry, etc.): **Water**	17. Liquid inlet pressure (psi): **12 - 18**

State of Wisconsin
Department of Natural Resources
COMPLIANCE

COMPLIANCE CERTIFICATION - MONITORING AND REPORTING DESCRIPTION OF METHODS USED FOR DETERMINING

Form 4530-118 11-93 Information attached? __ (y/n)

All applicants except non-Part 70 sources are required to certify compliance with all applicable air pollution permit requirements by including a statement within the permit application of the methods used for determining compliance (please see sec. NR 407.05(4)(i), Wis. Adm. Code.) This statement must include a description of the monitoring, recordkeeping, and reporting requirements and test methods. In addition, the application must include a schedule for compliance certification submittals during the permit term. These submittals must be no less frequent than annually, and may need to be more frequent if specified by the underlying applicable requirement or by the Department.

SEE INSTRUCTIONS ON REVERSE SIDE

1.	Facility name: **Atlas Resin Proppants, LLC**	2.	Facility identification number: **627005280**
3.	Stack identification number: **S150**	4.	Unit identification number: **P151, P152, T131. T132**

5. This Unit will use the following method(s) for determining compliance with the requirements of the permit (check all that apply and attach the appropriate form(s) to this form).

☐ Continuous Emission Monitoring (CEM) - Form 4530-119
Pollutant(s):

☐ Periodic Emission Monitoring Using Portable Monitors - Form 4530-120
Pollutant(s):

☒ Monitoring Control System Parameters or Operating Parameters of a Process - Form 4530-121
Pollutant(s): **Particulate matter, VOC, phenol, ammonia**

☐ Monitoring Maintenance Procedures - Form 4530-122
Pollutant(s):

☐ Stack Testing - Form 4530-123
Pollutant(s):

☐ Fuel Sampling and Analysis (FSA) - Form 4530-124
Pollutant(s):

☒ Recordkeeping - Form 4530-125
Pollutant(s): **Ammonia, formaldehyde**

☐ Other (please describe) - Form 4530-135
Pollutant(s):

6. Compliance certification reports will be submitted to the Department according to the following schedule:

Start date: **February 14th after permit renewal**
and every **12** months thereafter.

Compliance monitoring reports will be submitted to the Department according to the following schedule:

Start date: **August 14th or February 14th after permit renewal, whichever comes first**
and every **6** months thereafter.

State of Wisconsin
Department of Natural Resources

COMPLIANCE DEMONSTRATION BY MONITORING CONTROL SYSTEM PARAMETERS OR OPERATING PARAMETERS OF A PROCESS AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-121 11-93 Information attached? __ (y/n)

The monitoring of a control system parameter or a process may be acceptable as a compliance demonstration method provided that a correlation between the parameter value and the emission rate of a particular pollutant is established in the form of a curve of emission rate versus parameter values. Ideally three sets of stack test data, that bracket the emission limit if possible, could be used to define the emission curve. This correlation shall constitute the certification of the system. It should be attached for Department approval. If it is not attached, please submit it within 60 days of the startup of the system.

SEE INSTRUCTIONS ON REVERSE SIDE

1.	Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3.	Stack identification number:**S150**	4. Unit identification number: **P151, P152, T131, T132**
5.	Pollutant(s) being monitored: **Particulate matter, VOC, phenol, ammonia**	
6.	Name of manufacturer: **N/A**	7. Model number: **N/A**
8.	Is this an existing system? ☒ Yes ☒ No	9. Installation date:

10. Method of monitoring description:

<u>Particulate Matter, VOC, Phenol* [Existing]</u>: Eliminate the current monitoring and recordkeeping of Nephelometric Turbidity Units (NTU) to demonstrate compliance with particulate matter emission limits in accordance with a February 25, 2011 letter from Mr. Jeffrey Johson (WDNR). Limit the compliance demonstration to the existing monitoring and recordkeeping of the pressure drop across the wet scrubber and demister, the pH of the wet scrubber absorbing fluid, and the wet scrubber liquor flow. Regarding the latter, due to frequent fouling of the flow meter, it is requested that an alternate means to demonstrate compliance with scrubber flow rate measurement requirements be established as follows: at least once every 8-hours of operation, conduct a documented visual inspection to confirm scrubber liquor pump flow, coupled with monitoring and recording of the motor power of the scrubber liquor recirculation pump.

Only the monitoring of the flow rate or the requested alternative compliance method is specified for phenol.

<u>Ammonia [New]</u>: As a newly expected pollutant for which the scrubber is expected to provide limited removal, the same parametric monitoring as stipulated above for phenol compliance demonstration purposes is requested.

11. Backup system: **N/A**

12. Indicate by checking: **A CAM plan is currently in Part III of the operating permit.**

The monitoring system shall be subject to appropriate performance specifications, calibration requirements and quality assurance procedures. ☐ A quality assurance/quality control plan for the monitoring system is attached for Department approval. ☐ If the plan is not attached, please submit it within 60 days of the start-up of the monitoring program. ☒ The plan was submitted to the Department.

13. The applicant shall propose an appropriate averaging period, (i.e., a particular number of continuous hours) for the purpose of defining excess emissions. The Department may approve the proposed averaging period, or other period which the Department determines to be appropriate. Provide the proposed averaging period(s) below.

Parameter	Averaging Period
Pressure Drop	**Every 8-hours of operation or once per day, whichevery yields the greater number of measurements**
Flow Rate or Visual Confirmation of Pump Flow & Check of Motor Power of Scrubber Recirculation Pump	**Every 8-hours of operation or once per day, whichevery yields the greater number of measurements**
pH	**Every 8-hours of operation or once per day, whichevery yields the greater number of measurements**

State of Wisconsin
Department of Natural Resources

COMPLIANCE DEMONSTRATION BY RECORDKEEPING
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-125 11-93 Information attached? (y/n)

Recordkeeping may be acceptable as a compliance demonstration method provided that a correlation between the parameter value recorded and the emission rate of a particular pollutant is established in the form of a curve or chart of emission rate versus parameter values. This correlation may constitute the certification of the system. It should be attached for Department approval. If it is not attached, please submit it within 60 days of the startup of the system.

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, T131, T132**
5. Pollutant(s) being monitored: **ammonia, formaldehyde**	6. Material or parameter being monitored and recorded: **hexa and/or sand throughput**

7. Method of monitoring and recording:

Ammonia: Monitor and record daily throughput (*e.g.*, pounds of hexa per day and/or pounds of sand per day), by Tower, coupled with dispersion modeling data (similar to that which is noted above) that corresponds to the types of sand recipes currently being manufactured and which effectively daily limits in terms of hexa and/or sand throughput by Tower. Ammonia emissions will be calculated monthly and summed for each consecutive 12-month period to demonstrate compliance with the requested facility-wide ammonia limit of 237.5 TPY.

Formaldehyde: Maintain records of maximum theoretical formaldehyde emissions that indicate that such emissions comply with NR 445 table values.

8. List any EPA methods used:

N/A

9. Is this an existing method of demonstrating compliance? ☒ Yes ☐ No	10. Installation date: **2010**

11. Backup system: **None**

12. Compliance shall be demonstrated: ☒ Daily ☐ Weekly ☐ Monthly ☐ Batch (not to exceed monthly)

13. Indicate by checking: **Recordkeeping only**

The monitoring system shall be subject to appropriate performance specifications, calibration requirements, and quality assurance procedures. ☐ A quality assurance/quality control plan for the recordkeeping system is attached for Department approval. ☐ If the plan is not attached, please submit it within 60 days of the startup of the recordkeeping program. ☐ The plan was submitted to the Department on _____.

***** The compliance records shall be available for Department inspection. The format for the compliance certification report and the excess emission report shall be approved by the Department. A proposed format for the compliance certification report and excess emission report shall be submitted at the same time as the application.

***** The source shall record any malfunction that causes or may cause an emission limit to be exceeded. ***** Malfunctions shall be reported to the Department the next business day. Hazardous air spills shall be reported to the Department immediately.

State of Wisconsin
Department of Natural Resources

EMISSION UNIT HAZARDOUS AIR POLLUTANT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-126 11-93 Information attached? N (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152**

5. Unit material description: **Sand or ceramic pellets**

6. Complete the following summary of hazardous air emissions from this unit. Attach sample calculations and emission factor references. Attached? **Yes – Only previously unreported (unknown) emissions are listed below**

Pollutant CAS	Actual emissions	Units	Maximum theoretical emissions	Units	Potential to emit	
Ammonia **CAS No. 7664-41-7**	**30.77** **232,629**	**Lb/hr** **Lb/yr**	**69.85** **611,886**	**Lb/hr** **Lb/yr**	**237.5***	TPY
Formaldehyde **CAS No. 50-00-0**	**303**	**Lb/yr**	**564**	**Lb/yr**	**564**	TPY
						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
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						TPY
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						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
						TPY

** This is a facility-wide limit, which may be entirely consumed by this process assuming no emissions from other operations.*

State of Wisconsin
Department of Natural Resources

CURRENT EMISSIONS REQUIREMENTS AND STATUS OF UNIT AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-130 Rev. 12-99 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, T131, T132**

5. Pollutant	6. Wis. Adm. Code Wis. Stats., 40 CFR	7. State Only	8. Limitation	9. Compliance Status (in or out)
Formaldehyde	**s. NR 445.07 Wis. Adm. Code**	**X**	**s. NR 445.08(2) Wis. Adm. Code**	**IN**
Ammonia	**s. NR 445.07 Wis. Adm. Code**	**X**	**s. NR 445.08(2) Wis. Adm. Code**	**IN**

10. Other requirements (e.g., malfunction reporting, special operating conditions from an existing permit, etc.)	State Only	Compliance Status (in or out)

** **PART 70 SOURCES ONLY:**

1. **Be sure to review the Compliance Assurance Monitoring (CAM) Rule, 40 CFR Part 64, for the Renewal Application.** The CAM rule requires owners and operators of Part 70 sources to monitor the operation and maintenance of their control equipment so that they can evaluate the performance of their control devices and report whether or not their facilities meet established emission standards. All facilities that have a Title V, Part 70, Federal Operating Permit are required to meet the CAM rule and **submit a CAM plan with this Title V renewal application.** The rule requires that a CAM plan be submitted with the Title V renewal application for each pollutant at **each emissions unit** which has a potential to emit - prior to controls - of that pollutant greater than the major source threshold for the respective pollutant. Please refer to the CAM Technical Guidance web site at http://www.epa.gov/ttn/emc/cam.html for further documentation on the rule and how to prepare a CAM plan for submittal with the renewal application.

2. List all applicable **Maximum Achievable Control Technology** (MACT) rule(s) and the effective date(s) if they were promulgated during the last 3 years of your operation permit term. Identify the emissions units subject to each MACT rule listed.

Atlas Resin Proppants, LLC
Sand Coating Operation - Wet Scrubber System (S50, S150)

		Pollutant	CAS RN	Maximum product use lbs-Hexa Soln/hr	Maximum product use lb product/hr	Emissions lb/lb product	MTE lb/hr	MTE tpy	PTE lb/hr	PTE tpy
Emission Point ID:	S50, S150									
Control Device ID:	C50, C150									
		Process hazardous air pollutants [Only those not previously estimated]								
Emission Unit ID:	P51, P151 Batch Mixer BM									
	P52, P152 Continuous Mixer CM	Ammonia	7664-41-7	880		1.59E-01	139.70	611.89	83.60	237.50
		Formaldehyde	50-00-0		76,000	1.69E-06	0.13	0.56	0.13	0.56
Description:	Wet Scrubber System									
NH3 control efficiency:	1.724%									
Formaldehyde control efficiency:	0%									
Maximum operation, hr/yr:	8,760									

NOTES:

***** Emissions are as combined total for Towers A & B *****

1. A Wet Scrubber System will control organic PM, VOC, Phenol, and Ammonia emissions from each sand coating line.
2. Maximum operation, hr/yr = 8,760 hr/yr.
3. Reserved
4. Except where otherwise noted below, process emissions (lb/lb product) were provided by stack testing at Atlas' Taylor facility, as follows:
   - Ammonia: Emissions, lb/lb-hexa soln. = 69.85 lbs-NH3 / 440 lbs-Hexa Solution [Mass Balance based on formulation with max. hexa usage]
   - Formaldehyde: Based on 12-2010 stack test results for Atlas Resin Proppants' Merrillan West faci Tower C 2.87E-06 lb/lb-sand Tower D 5.13E-07 lb/lb-sand Avg. EF 1.69E-06 lb/lb-sand
5. Process MTE, lb/hr = Maximum product use, lb product/hr x Emissions lb/lb product
7. MTE, tpy = MTE, lb/hr x Maximum operation, hr/yr x 1 ton/2,000 lb
8. PTE, lb/hr = MTE, lb/hr x (1 - Control efficiency)
9. PTE, tpy = PTE, lb/hr x Maximum operation, hr/yr x 1 ton/2,000 lb
10. NH3 control efficiency based on average estimates for 2006 through 2009. A proposed cap is requested at 95% of the major NSR threshold which equates to 237.5 TPY
    The hourly PTE emission rate is based on AERMOD dispersion modeling, assuming both towers operate at rated capacity concurrently.

Atlas Resin Proppants, LLC
Raw Material Heater Combustion Emissions (S20, S120)

Emission Point ID:	S20, S120
Control Device ID:	C20, C120
Emission Unit ID:	P24, P123
Description:	Natural gas combustion products from raw material heaters
Maximum operation, hr/yr:	8,760
Maximum heat input capacity, MMBtu/hr:	9.5
Primary fuel:	Natural gas
Heating value, MMBtu/MMCF	1,050
Fuel type:	Propane
Heating value, MMBtu/1,000-gal:	92

Pollutant	CAS RN	NG emissions lb/MMCF	NG emissions lb/MMBtu	MTE/PTE lb/hr	MTE/PTE tpy
Criteria pollutant					
CO	630-08-0	84	0.0800	0.7619	3.34
NOx	---	100	0.0952	0.9070	3.97
SO2	7446-09-5	0.6	0.0006	0.0054	0.02
VOC	---	5.5	0.0052	0.0499	0.22
Hazardous air pollutant					
Ammonia	7664-41-7	3.20E+00	0.0030	0.0290	0.1271
Arsenic	7440-38-2	2.0E-04	0.0000	0.0000	0.0000
Barium	71-43-2	4.4E-03	0.0000	0.0000	0.0002
Benz(a)anthracene	56-55-3	1.8E-06	0.0000	0.0000	0.0000
Benzene	71-43-2	2.1E-03	0.0000	0.0000	0.0001
Benzo(a)pyrene	50-32-8	1.2E-06	0.0000	0.0000	0.0000
Benzo(b)fluoranthene	205-99-2	1.8E-06	0.0000	0.0000	0.0000
Benzo(k)fluoranthene	207-08-9	1.8E-06	0.0000	0.0000	0.0000
Beryllium	7440-41-7	1.2E-05	0.0000	0.0000	0.0000
Cadmium	7440-43-9	1.1E-03	0.0000	0.0000	0.0000
Chromium	7440-47-3	1.4E-03	0.0000	0.0000	0.0001
Cobalt	7440-48-4	8.4E-05	0.0000	0.0000	0.0000
Copper	7440-50-8	8.5E-04	0.0000	0.0000	0.0000
Dibenzo(a,h)anthracene	53-70-3	1.2E-06	0.0000	0.0000	0.0000
Formaldehyde	50-00-0	7.5E-02	0.0001	0.0007	0.0030
Hexane	110-54-3	1.8E+00	0.0017	0.0163	0.0715
Indeno(1,2,3-cd)pyrene	193-39-5	1.8E-06	0.0000	0.0000	0.0000
Manganese	7439-96-5	3.8E-04	0.0000	0.0000	0.0000
Mercury	7439-97-6	2.6E-04	0.0000	0.0000	0.0000
Molybdenum	7439-98-7	1.1E-03	0.0000	0.0000	0.0000
Naphthalene	91-20-3	6.1E-04	0.0000	0.0000	0.0000
Nickel	7440-02-0	2.1E-03	0.0000	0.0000	0.0001
Nitrous oxide	10024-97-2	2.2E+00	0.0021	0.0200	0.0874
Selenium	7782-49-2	2.4E-05	0.0000	0.0000	0.0000
Toluene	108-88-3	3.4E-03	0.0000	0.0000	0.0001

NOTES:

***** Emissions are per each raw material heater *****

1. The heaters run on natural gas.
2. Emission rates for natural gas are provided by USEPA's AP-42, Tables 1.4-1, 1.4-2. 1.4-3, and 1.4-4. Units are converted to lb/MMBtu with the heating value. However, the ammonia emission factor is from USEPA's FIRE database.
3. Reserved.
4. MTE/PTE, lb/hr = Maximum heat input capacity, MMBtu/hr x Emissions, lb/MMBtu
5. MTE/PTE, tpy = MTE/PTE, lb/hr x Maximum operation, hr/yr x 1 ton/2,000 lb

Facility: Taylor **Theoretical Worst-Case Hexa Basis w/Scrubber Control**

Dispersion modeling using AERMOD was performed (August 2010) to estimate maximum hourly ammonia emissions under the following scenarios, which would comply with acceptable ambient concentrations under s. NR 445:

Scenarios:
1. Both Towers A & B operating simultaneously at equal emission rates
2. Tower A operating alone
3. Tower B operating alone

For each scenario, a total emission rate of 1 lb-NH3/hr per tower was modeled to obtain a corresponding ambient concentration. Based on a linear relationship, a NH3 emission rate was proportionately estimated that corresponds to the acceptable ambient air concentrations (AAC) under s. NR 445.

Extrapolation of AERMOD Results to Yield Hourly NH3 Emission Rates Compliant with NR 445 Acceptable Ambient Concentration (AAC)

	AERMOD Model Input, lb-NH3/hr[1]							Modeled	Extrap.	Extrapolated Max. Hourly Emissions, lb-NH3/hr[3]						
	Tower A			Tower B			Total	Impact	Conc.[2]	Tower A			Tower B			Total
Scenario	Total	Stack	R. Vent	Total	Stack	R. Vent	NH3	µg/m³	µg/m³	Total	Stack	R. Vent	Total	Stack	R. Vent	NH3
1	1	0.93	0.07	1	0.93	0.07	2	10	418	41.8	38.9	2.9	41.8	38.9	2.9	83.6
2	1	0.93	0.07	0	0.00	0.00	1	6.8	418	61.5	57.2	4.3	0.0	0.0	0.0	61.5
3	0	0.00	0.00	1	0.93	0.07	1	5.2	418	0.0	0.0	0.0	80.4	74.8	5.6	80.4

Notes
1. See the Note 3 of the 'NH3 Estimation' tab of the Excel workbook for derivation of the allocation of emissions to scrubber stack vs. roof vent.
2. The NR 445 AAC for ammonia is 418 µg/m³.
3. Calculated as: (AERMOD Model Input, lb-NH3/hr) x (Extrap. Conc., µg/m³) / (Modeled Impact, µg/m³).

Estimation of Daily Maximum Hexa Usage Rates Compliance with NR 445 AAC

	Daily Rate to Hit Extrap. Conc.									Retention in Sand					
	lb NH3/day[1]			lb Hexa/day[3]			lb-Sand/day[4]			as lb-N/day[5]			as lb-Hexa/day[6]		
Scenario	Tower A	Tower B	Total	Tower A	Tower B	Total	Tower A	Tower B	Total	Tower A	Tower B	Total	Tower A	Tower B	Total
1	1,003	1,003	2,006	3,655	3,655	7,310	874,169	874,169	1,748,338	658	658	1,316	1,647	1,647	3,294
2	1,475	0	1,475	5,375	0	5,375	1,285,542	0	1,285,542	968	0	968	2,422	0	2,422
3	0	1,929	1,929	0	7,029	7,029	0	1,681,094	1,681,094	0	1,266	1,266	0	3,167	3,167

Notes
1. Calculated as: (Extrap. Max. Hourly Emission, lb-NH3/hr) x (24 hr/day)
2. Key Factors Used:
   a. Average Ratio of Uncontrolled NH3 to total Hexa Usage (2006-2009): 0.27928 lb-uncontrolled NH3/lb-hexa [NOTE: Standard Deviation of 0.00585]
   b. Theoretical Ratio of Hexa to Sand Usage: 0.00418 lb-hexa/lb-sand
   c. Amount of nitrogen retained in sand: 0.0753% nitrogen, by mass [Per PLENCO Analytical data]
3. Calculated as: (Daily Rate to Hit Extrap. Conc., lb NH3/day) / (Average Ratio of Uncontrolled NH3 to total Hexa Usage, lb-uncontrolled NH3/lb-hexa)/(1 - % NH3 Control)
   Annualized Average (2006-2009) Scrubber Control Efficiency for NH3: 1.7242%
4. Calculated as: (Daily Rate to Hit Extrap. Conc., lb Hexa/day) / (Theoretical Ratio of Hexa to Sand Usage, lb-hexa/lb-sand)
5. Calculated as: (Daily Rate to Hit Extrap. Conc., lb Sand/day) x (Amount of Nitrogen Retained in Sand, % by mass)
6. Calculated as: (Retention in Sand as lb-N/day) / (MW Nitrogen, lb/lb-mole) x (1 lb-mole Hexa / 4 lb-mole N) x (MW Hexa, lb/lb-mole)